

Please amend the above-identified application as follows:

Amendments to the Claims:

This listing of claims will replace all prior versions, and listing, of claims in the application.

1. (Currently Amended) A method for navigating a graphical user interface (GUI) having at least one page, comprising:

providing a first booklet, wherein user interaction with the first booklet can cause the GUI to navigate to a new page;

providing a request based on user interaction with the first booklet;

mapping the request to a control tree factory;

generating a control tree from the factory based on the request wherein the control tree includes a booklet control corresponding to the first booklet;

advancing the control tree through at least one lifecycle stage based on the request;
and

generating a response wherein the response can be used to render the new page;
wherein the at least one lifecycle stage includes an event lifecycle stage where at least one control of the control tree raise events to communicate with another control of the control tree; wherein the event stage occurs before a render lifecycle stage and wherein in the render stage the controls of the control tree create their own GUI representation; and

wherein a pre-render lifecycle stage occurs between the event lifecycle stage and the render lifecycle stage and wherein an additional control is dynamically added to the control tree at a stage before the pre-render lifecycle stage and wherein when the additional control is added to the control tree dynamically, a lifecycle catch-up process drives the additional control through lifecycle stages until the additional control catches-up to a current stage;

wherein when current stage is at a pre-render stage or later, the additional control is driven through at least an “init”, “load” and “raise events” lifecycle stage so that the additional control catches up to the current state;

wherein the controls of the control tree include a number of classes including a base control class; the base control class defines a set of services available to all controls,

wherein the lifecycles are defined by a set of methods representing stages in the lifecycle, a control can override methods of the lifecycle, at least one lifecycle stage can comprise two methods that are called by lifecycle driver;

wherein a Lifecycle class defines methods called during the control’s lifecycle; lifecycle events can have two methods, a base method to provide the lifecycle service for the control, and a method called to raise an event.

2. (Original) The method of claim 1 wherein:

the first booklet is at least one of: 1) a set of tabs and/or buttons; and 2) a menu.

3. (Original) The method of claim 1 wherein:

the first booklet is associated with at least one of the least one page.

4. (Original) The method of claim 1 wherein:

the new page can a second booklet.

5. (Original) The method of claim 1 wherein the step of generating a control tree from the factory comprises:

creating a metadata representation of a control tree; and

generating a class to construct the control tree based on the metadata representation.

6. (Original) The method of claim 1 wherein:
the request is an hypertext transfer protocol request (HTTP); and
the request originates from a web browser.
7. (Original) The method of claim 1, further comprising:
providing the response to a web browser.
8. (Original) The method of claim 1 wherein:
the control tree is driven through the at least one lifecycle stage by an interchangeable
lifecycle component.
9. (Original) The method of claim 1 wherein:
the booklet control has an interchangeable persistence mechanism.
10. (Original) The method of claim 1 wherein:
the booklet control can render itself according to a theme.
11. (Original) The method of claim 1 wherein:
the booklet control can interact with another of the at least one controls.
12. (Original) The method of claim 1 wherein:
the booklet control can advance through the at least one lifecycle stage in parallel with
other controls in the control tree.

13. (Original) The method of claim 1 wherein:
the at least one lifecycle stage is one of: init, load state, create child controls, load, raise events, pre-render, render, save state, unload and dispose.
14. (Original) The method of claim 1 wherein:
the response is an hypertext transfer protocol (HTTP) response.
15. (Original) The method of claim 1 wherein:
the booklet control can raise events and respond to events.
16. (Currently Amended) A method for navigating a portal graphical user interface (GUI) having at least one page, comprising:
providing a first booklet, wherein user interaction with the first booklet can cause the GUI to navigate to a new portal page;
providing a request based on user interaction with the first booklet;
mapping the request to a control tree factory;
generating a control tree from the factory based on the request wherein the control tree includes a booklet control corresponding to the first booklet;
advancing the control tree through at least one lifecycle stage based on the request;
generating a response wherein the response can be used to render the new portal page;
and
wherein the new page can be a second booklet;
wherein the at least one lifecycle stage includes an event lifecycle stage where at least one control of the control tree raise events to communicate with another control of the control

tree; wherein the event lifecycle stage occurs before a render lifecycle stage and wherein in the render stage, the controls of the control tree create their own GUI representation; and

wherein a pre-render lifecycle stage occurs between the event lifecycle stage and the render lifecycle stage; and

wherein an additional control is dynamically added to the control tree at a stage before the pre-render lifecycle stage; and

wherein when the additional control is added to the control tree dynamically, a lifecycle catch-up process drives the additional control through lifecycle stages until the additional control catches-up to a current stage;

wherein when current stage is at a pre-render stage or later, the additional control is driven through at least an “init”, “load” and “raise events” lifecycle stage so that the additional control catches up to the current state;

wherein the controls of the control tree include a number of classes including a base control class; the base control class defines a set of services available to all controls,

wherein the lifecycles are defined by a set of methods representing stages in the lifecycle, a control can override methods of the lifecycle, at least one lifecycle stage can comprise two methods that are called by lifecycle driver;

wherein a Lifecycle class defines methods called during the control’s lifecycle; lifecycle events can have two methods, a base method to provide the lifecycle service for the control, and a method called to raise an event.

17. (Original) The method of claim 16 wherein:

the first booklet is at least one of: 1) a set of tabs and/or buttons; and 2) a menu.

18. (Original) The method of claim 16 wherein:

the first booklet is associated with at least one of the least one portal page.

19. (Original) The method of claim 16 wherein the step of generating a control tree from the factory comprises:

creating a metadata representation of a control tree; and

generating a class to construct the control tree based on the metadata representation.

20. (Original) The method of claim 16 wherein:

the request is an hypertext transfer protocol request (HTTP); and

the request originates from a web browser.

21. (Original) The method of claim 16, further comprising:

providing the response to a web browser.

22. (Original) The method of claim 16 wherein:

the control tree is driven through the at least one lifecycle stage by an interchangeable lifecycle component.

23. (Original) The method of claim 16 wherein:

the booklet control has an interchangeable persistence mechanism.

24. (Original) The method of claim 16 wherein:

the booklet control can render itself according to a theme.

25. (Original) The method of claim 16 wherein:

the booklet control can interact with another of the at least one controls.

26. (Original) The method of claim 16 wherein:

the booklet control can advance through the at least one lifecycle stage in parallel with other controls in the control tree.

27. (Original) The method of claim 16 wherein:

the at least one lifecycle stage is one of: init, load state, create child controls, load, raise events, pre-render, render, save state, unload and dispose.

28. (Original) The method of claim 16 wherein:

the response is an hypertext transfer protocol (HTTP) response.

29. (Original) The method of claim 16 wherein:

the booklet control can raise events and respond to events.

30. (Currently Amended) A machine readable medium having instructions stored thereon that when executed by a processor cause a system to:

provide a first booklet, wherein user interaction with the first booklet can cause a graphical user interface (GUI) to navigate to a new page;

provide a request based on user interaction with the first booklet;

map the request to a control tree factory;

generate a control tree from the factory based on the request wherein the control tree includes a booklet control corresponding to the first booklet;

advance the control tree through at least one lifecycle stages based on the request; and

generate a response wherein the response can be used to render the new page;
wherein the at least one lifecycle stage includes an event lifecycle stage where at least one control of the control tree raise events to communicate with another control of the control tree; wherein the event lifecycle stage occurs before a render lifecycle stage and wherein in the render stage, the controls of the control tree create their own GUI representation; and

wherein a pre-render lifecycle stage occurs between the event lifecycle stage and the render lifecycle stage and wherein an additional control is dynamically added to the control tree at a stage before the pre-render lifecycle stage and wherein when the additional control is added to the control tree dynamically, a lifecycle catch-up process drives the additional control through lifecycle stages until the additional control catches-up to a current stage;

wherein when current stage is at a pre-render stage or later, the additional control is driven through at least an “init”, “load” and “raise events” lifecycle stage so that the additional control catches up to the current state;

wherein the controls of the control tree include a number of classes including a base control class; the base control class defines a set of services available to all controls,

wherein the lifecycles are defined by a set of methods representing stages in the lifecycle, a control can override methods of the lifecycle, at least one lifecycle stage can comprise two methods that are called by lifecycle driver;

wherein a Lifecycle class defines methods called during the control’s lifecycle; lifecycle events can have two methods, a base method to provide the lifecycle service for the control, and a method called to raise an event.

31. (Original) The machine readable medium of claim 30 wherein:

the first booklet is at least one of: 1) a set of tabs and/or buttons; and 2) a menu.

32. (Original) The machine readable medium of claim 30 wherein:
the first booklet is associated with at least one of the least one page.
33. (Original) The machine readable medium of claim 30 wherein:
the new page can a second booklet.
34. (Original) The machine readable medium of claim 30 further comprising
instructions that when executed cause the system to:
create a metadata representation of a control tree; and
generate a class to construct the control tree based on the metadata representation.
35. (Original) The machine readable medium of claim 30 wherein:
the request is an hypertext transfer protocol request (HTTP); and
the request originates from a web browser.
36. (Original) The machine readable medium of claim 30, further comprising
instructions that when executed cause the system to:
providing the response to a web browser.
37. (Original) The machine readable medium of claim 30 wherein:
the control tree is driven through the at least one lifecycle stage by an interchangeable
lifecycle component.
38. (Original) The machine readable medium of claim 30 wherein:
the booklet control has an interchangeable persistence mechanism.

39. (Original) The machine readable medium of claim 30 wherein:
the booklet control can render itself according to a theme.
40. (Original) The machine readable medium of claim 30 wherein:
the booklet control can interact with another of the at least one controls.
41. (Original) The machine readable medium of claim 30 wherein:
the booklet control can advance through the at least one lifecycle stage in parallel with
other controls in the control tree.
42. (Original) The machine readable medium of claim 30 wherein:
the at least one lifecycle stage is one of: init, load state, create child controls, load,
raise events, pre-render, render, save state, unload and dispose.
43. (Original) The machine readable medium of claim 30 wherein:
the response is an hypertext transfer protocol (HTTP) response.
44. (Original) The machine readable medium of claim 30 wherein:
the booklet control can raise events and respond to events.
45. (Currently Amended) A computer readable storage medium, comprising:
a code segment including instructions to provide a first booklet, wherein user
interaction with the first booklet can cause a graphical user interface (GUI) to navigate to a
new page;

a code segment including instructions to provide a request based on user interaction with the first booklet;

a code segment including instructions to map the request to a control tree factory;

a code segment including instructions to generate a control tree from the factory based on the request wherein the control tree includes a booklet control corresponding to the first booklet;

a code segment including instructions to advance the control tree through at least one lifecycle stage based on the request; and

a code segment including instructions to generate a response wherein the response can be used to render the new page;

wherein the at least one lifecycle stage includes an event lifecycle stage where at least one control of the control tree raise events to communicate with another control of the control tree; wherein the event lifecycle stage occurs before a render lifecycle stage and wherein in the render stage, the controls of the control tree create their own GUI representation; and

wherein a pre-render lifecycle stage occurs between the event lifecycle stage and the render lifecycle stage and wherein an additional control is dynamically added to the control tree at a stage before the pre-render lifecycle stage and wherein when the additional control is added to the control tree dynamically, a lifecycle catch-up process drives the additional control through lifecycle stages until the additional control catches-up to a current stage;

wherein when current stage is at a pre-render stage or later, the additional control is driven through at least an “init”, “load” and “raise events” lifecycle stage so that the additional control catches up to the current state;

wherein the controls of the control tree include a number of classes including a base control class; the base control class defines a set of services available to all controls,

wherein the lifecycles are defined by a set of methods representing stages in the lifecycle, a control can override methods of the lifecycle, at least one lifecycle stage can comprise two methods that are called by lifecycle driver;

wherein a Lifecycle class defines methods called during the control's lifecycle; lifecycle events can have two methods, a base method to provide the lifecycle service for the control, and a method called to raise an event.

46. (New) The method of claim 1, wherein a naming scope provides support for uniquely naming a control within a tree; unique names are used for state management; controls have three types of names: 1) Id – is a user assigned value that should be unique within a name scope, 2) ScopeId is a generated name that is unique within a scope, and 3) UniqueId is the globally unique name of the control.

47. (New) The method of claim 46, wherein a Context class provides services to controls in the tree, these services are protocol-independent; the context provides the following services: 1) Access to an Abstract Data Layer, the context class providing an object implementing the interface providing an abstract data layer, 2) Request Type, the context class contains properties indicating what type of request is happening, 3) Request Information, the context class provides information that comes from the request; and 4) Generic Services, the context class allows controls to access and register as service providers to other controls.

48. (New) The method of claim 47 wherein the Renderer class is an interface that allows a class to be created and which acts as a rendering proxy for a control; a control has rendering methods allowing the control to output its representation into a stream; wherein there are two

primary methods for rendering: `beginRender()` and `endRender()`; wherein Default rendering can be overridden by setting a control's renderer by providing an object implementing the `Renderer` interface